

predominate along the riverbank, whereas *Impatiens capensis*, *Ariseama triphyllum* and members of the Apiaceae such as *Geum canadense* may dominate higher ground.

The composition of the shrub and herb strata is also correlated with disturbance status and prior land use. On highly disturbed floodplains such as old fields or logged areas Japanese Honeysuckle (*Lonicera japonica*) and Chinese Privet (*Ligustrum sinense*) have completely choked out native plant populations. In the case of the latter, impenetrable thickets covering several acres may be found. On less disturbed areas natives such as Spicebush (*Lindera benzoin*), Possum Haw (*Ilex verticillata*) or Bottonbush (*Cephalanthus occidentalis*) predominate.

The other Palustrine communities described in this report are associated with residual soils, and include Piedmont Mountain Bottomland Forest and Low Elevation Seep. Fluvial landforms which could have historically supported Bottomland Hardwood or Swamp Forest show little recovery in early successional states (regenerative phases) of canopy vegetation indicative of these forests other than what I term as secondary species elements. These secondary elements are canopy trees indicative of bottomland or swamp habitats such as Hackberry (*Celtis leavigata*), Bitternut Hickory (*Carya cordiformis*) or Green Ash (*Fraxinus pennsylvanica*), but without what I feel are the habitat delimiting species such as Swamp Red Oak (*Quercus shumardii*), or Swamp Chesnut Oak (*Q. michauxii*). My observations indicate that backwater regions associated with small tributaries, such as found at Carter's Creek (D01), often have the necessary conditions for Swamp or Bottomland Forests if they have not been exposed to frequent timber cutting or have not been clearcut. These necessary conditions are:

- Looping, winding, low gradient streams.
- Nutrient replenishment via intermittent flooding.
- Poorly drained or hydric soil series.
- An undisturbed soil profile.

My own opinion, which has solidified during this survey is that these forests do not regenerate well and have low tolerance of timber management practices. Bottomland Oaks if removed or selectively reduced often will have no local seed sources for natural reestablishment. Seedlings which are present after canopy removal are subject to increased sunlight and drying winds and as a result may not compete well with exotic species or other bottomland species which have wind dispersed seeds and faster apical growth (gap-phasers). The disturbed soil may also undergo a drastic loss of organic material which has accumulated under seasonally anaerobic conditions. As a result of this decreased organic percentage the soil may no longer be suitable for acorn germination and/or survival. Vegetation indicating Bottomland Forests in this area includes shrubs and herbs associated with floodplain terraces plus others which seem to be more habitat selective such as Paw-Paw (*Asimina triloba*), Southern Arrow-wood (*Viburnum dentatum*), Possum Haw (*Ilex decidua*), or species associated with rich mesic or basic terrestrial forests such as Wood Reed (*Cinna arundinacea*), Blue Star (*Amsonia tabernaemontana*), Shagbark Hickory (*Carya ovata*), and Southern Sugar Maple (*Acer floridanum*).

The final Palustrine communities described in this report are Low Elevation Seep and Floodplain Pool. Floodplain Pools occur in two types: (1) ephemeral pools located on well drained to moderately well drained alluvial sediments of floodplains and (2) long-lived depression pools which are found in the same type of situation as Low Elevation Seeps, that is along wet outcrops or steep bluffs (see Figure 6). Generally areas which are constantly wet for most of the growing season are quite small and are probably associated with small inclusions of "developed" soil units with a clay subsoil. A developed soil unit is a soil having a characteristic profile as opposed to most bottomland soils which are mixed